Unmanned

Aircraft

Flight Manual

(DID, night, out of sight, 30 meters, hazardous materials, property drop)

Applies to applications that do not specify the location

Operator Name.

Standard Manual of the Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism (April 1, 2020 edition)

About this manual

This manual describes the procedures and other information required for the flight of unmanned aircraft with permits and approvals under the Civil Aeronautics Act.

In addition to complying with this manual, the operator must fully understand the functions and performance of the aircraft to be used, and have examined in advance the risks of flight that may arise depending on the method and location of the flight. In addition, every precaution shall be taken to ensure the safety of unmanned aircraft flights, including taking additional safety measures.

目 next

1) Inspection and maintenance of unmanned aircraft

1－1　Aircraft Inspection and Maintenance Methods

(1) Pre-flight inspection

Before the flight, inspect the aircraft for the following points

Is the equipment mounted securely (screws and other parts missing or loose)?

Are there any unusual noises in the engine or motor?

Are there any damages or distortions to the aircraft (propeller, frame, etc.)?

Is the fuel load or battery charge sufficient?

Is the communication system, propulsion system, power supply system, and automatic control system in good working order?

(2) Post-flight inspection

After the flight, the aircraft will be inspected for the following

Are there any dusts or other contaminants attached to the aircraft?

Is the equipment mounted securely (screws and other parts missing or loose)?

Are there any damages or distortions to the aircraft (propeller, frame, etc.)?

Is there any abnormal heat generation in each device?

(3) Every 20 hours of flight, the following items will be inspected on the unmanned aircraft

Are there any parts that need to be replaced?

Is the equipment mounted securely (screws falling off, loose, etc.)?

Are there any damages or distortions to the aircraft (propeller, frame, etc.)?

Is the communication system, propulsion system, power supply system, and automatic control system in good working order?

1－2　Preparation of inspection and maintenance records

When an unmanned aircraft is inspected and serviced after every 20 hours of flight as specified in 1-1 (3), the person who performed the inspection and service will prepare a record of the inspection and service in accordance with the "Inspection and Service Record for Unmanned Aircraft" (Form 1), and maintain the record in electronic or written form.

(2) Training of personnel operating unmanned aerial vehicles and the rules to be followed

２－１　Basic piloting skills

To familiarize the pilot with the operation of the radio, a minimum of 10 hours of flight practice shall be given until the pilot is able to easily perform the following tasks. During the pilot training, the training shall be conducted under the supervision of a person with sufficient experience.
(2) The training shall be carried out in an area that does not require a permit or other permission, or in an area that has been approved for training.

項　eye	内　countenance
takeoff and landing	The aircraft shall take off to a height of 3 meters away from the pilot and land within the specified range. The aircraft must be able to perform this flight consistently for five consecutive flights.
hovering	Remain at eye level of the person being flown and within the range specified by the hoverer (within a radius of one meter) for a specified period of time. And be able to.
Left-right movement	The aircraft shall be able to move from the designated takeoff point to a landing point 20 meters away from the designated takeoff point in the left or right direction and land. The aircraft must be able to perform this flight consistently for five consecutive flights.
Forward and backward movement	The aircraft shall be able to move from the designated takeoff point to a landing point 20 meters in the forward and backward direction and land. The aircraft must be able to perform this flight consistently for five consecutive flights.
Flight in a horizontal plane	Must be able to move from a given point to a given point in sequence while maintaining a certain height. The aircraft must be able to perform this flight consistently for five consecutive flights.

2-2 Acquisition of pilotage skills necessary to carry out operations

Upon acquiring basic piloting skills, conduct pilot training to enable you to perform the following operations Conduct training at locations that do not require permission, or where you have received permission for training.

項　eye	内　countenance
counterflight	The flight to the surface allows the aircraft to move left to right, back and forth, and in the horizontal plane To enable the smooth conduct of flights in
Union of Flight	At a distance of 10 meters from the pilot, the aircraft will combine horizontal flight with ascent and descent Must be able to perform a combined five consecutive flights in a stable manner.
figure-of-eight flight	Must be able to perform five consecutive figure-eight flights in a stable manner.

２－３　Maintaining Handling Skills

To maintain the piloting skills specified in 2-1 and 2-2, periodically practice piloting. The training will be carried out at locations that do not require a permit, or where permission has been granted for training.

２－４　Maneuvering practice at night

Practice in a place that has been approved for training or indoors so that the operator can perform the operations listed in 2-2 at night.

２－５　Maneuvering practice in extra-visual flights

Even in non-visual flights, practice in an approved location for training or indoors to ensure the stability of the operations listed in 2-2.

２－６　Practice maneuvering for property drop

To achieve stable attitude control of the aircraft before and after dropping properties, and to acquire a record of five or more property drops, the trainees will practice in an approved location or indoors.

２－７　Creation of a flight record

When an unmanned aircraft is flown, a record of the flight shall be prepared by means of the "Flight Record of Unmanned Aircraft" (Form 2) and records shall be maintained electronically or in writing.

２－８　Matters to be observed by persons flying unmanned aircraft

(1) Not to fly unmanned aircraft over third parties in order to prevent harm to third parties.

(2) Before the flight, confirm that the weather, aircraft condition and flight path are in safe flying condition.

In addition, the applicant shall check the flight schedules of other unmanned aircraft (flight date, time, flight path, and flight altitude) using the flight information sharing system (https://www.fiss.mlit.go.jp/) and input the flight schedule information into the system. However, when the flight information sharing system is unavailable due to a power outage or other reasons, the aircraft operator will report the flight schedule of the unmanned aircraft to the Safety Planning Division, Safety Department, Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), and will take extra care to ensure that other unmanned aircraft and aircraft in the vicinity of the flight paths are not displayed in the system. We will make every effort to ensure safety by checking for the presence of

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(3) Immediately stop flying when unforeseen circumstances occur, such as wind gusts of 5 m/s or more, that make it impossible to fly an

unmanned aircraft safely.

(4) If it is found that the flight is to be over a place where a large number of people are gathered, the flight will be immediately halted.

(5) An unmanned aircraft shall not be flown while under the influence of alcohol or drugs that may prevent the aircraft from flying normally.

(6) Do not fly over areas where there is a risk of flight.

(7) If an aircraft underway is observed before the flight, it will not be flown.

(8) If another unmanned aircraft is observed in flight prior to the flight, coordinate with the person flying the other unmanned aircraft on the date and time of the flight, flight path, flight altitude, etc.

(9) If an aircraft in flight is observed, avoid approaching or colliding with the aircraft, for example, by landing.

(10) If the pilot sees another unmanned aircraft in flight during the flight, maintain a safe distance between the aircraft and the aircraft. If there is a risk of collision with another unmanned aircraft, avoid approaching or colliding with it by landing, etc., and coordinate the flight date and time, flight route, flight altitude, etc., with those who will be flying the other unmanned aircraft.

(11) Do not fly at unnecessarily low altitudes, emit harmonics, dive, or otherwise cause a nuisance to others.

(12) The property will not be suspended or towed.

(13) Do not fly in clouds or fog where sufficient visibility is not possible.

(14) To ensure the safety of unmanned aircraft in flight, the aircraft shall be periodically inspected and maintained in accordance with the manufacturer's operating instructions, and inspection and maintenance records shall be prepared.

(15) When an unmanned aircraft is flown, the following flight-related matters will be recorded

Flight date

Name of the person who will fly the unmanned aircraft

Name of unmanned aircraft

Outline of the flight (purpose and content)

Place and time of takeoff

Landing place and time

Flight time

Matters affecting the safety of unmanned aircraft flights (such as near-misses)

(16) In the event of death or injury of any person, damage to property of a third party, loss of aircraft in flight, or collision with or approach to an aircraft as a result of an unmanned aircraft flight, the following matters shall be promptly reported to the Flight Safety Division, Flight Safety Department, Safety Department, Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism, which has granted permission or otherwise, the Operations Division, Security Department, Regional Aviation Bureau, or the Airport Office. For reports made during off-duty hours, such as at night, call the nearest airport office that is in operation 24 hours a day.

Dates and numbers of permissions related to the flight of unmanned aircraft

Name of the person who flew the unmanned aircraft
Date, time and place of the accident
Name of unmanned aircraft
Overview of Unmanned Aircraft Accidents, etc.
Other useful information

(17) When flying an unmanned aircraft, the person flying the unmanned aircraft shall carry the original or a copy of the permit or approval.

System required to ensure safety

3－1　The basic system for flying unmanned aircraft

Secure the location and thoroughly check the surrounding area, and do not fly over third parties.

Do not fly at wind speeds of 5m/s or higher.

Do not fly in the event of rain or if it is likely to rain.

Do not fly in clouds or fog where sufficient visibility is not possible.

Assign the necessary number of assistants to ensure safety, and establish a system to mutually confirm safety.

Auxiliary personnel will be alerted to prevent third parties from entering the flight area.

The assistant shall constantly monitor the flight status of the unmanned aircraft and changes in the surrounding weather conditions, etc., from a position where he or she can see the entire flight path, and provide necessary advice to enable the pilot to fly the aircraft safely.

Do not fly in areas where helicopters and other vehicles are taking off and landing, and where there is a possibility of collision with a sailing aircraft.

Do not fly over or near places where many third parties come and go, schools, hospitals and other places where unspecified numbers of people gather.

Do not fly over or near highways, busy roads and railroads.

Do not fly near facilities such as high voltage lines, substations, radio towers, and wireless facilities.

Check and evaluate the impact on people or properties near the airfield site in advance, increase the number of assistants, inform them in advance, and coordinate with property managers and others.

When flying in parks, rivers, harbors, etc., make sure in advance that they are not in areas where flight is prohibited by management.

Select a takeoff/landing point where the distance between the aircraft and people or property is at least 30 meters, and a flight route that limits the access of third parties in the area.

Abort the flight immediately when a third party enters the airfield.

Do not fly at night over densely populated areas.

Do not fly over densely populated areas.

No nighttime unseen flights will be conducted.

In addition to 3-1, the necessary systems listed in 3-2 to 3-6 shall be implemented appropriately, depending on the type of flight.

3-2 System for flights over areas with high concentrations of people or houses, or flights in which it is impossible to maintain a distance of 30 meters between a person or property on the ground or water.

Unmanned aircraft to be flown are to be equipped with propeller guards. If the aircraft cannot be equipped with a propeller guard, be sure to assign an assistant to monitor and alert the pilot to prevent a third party from entering under the flight path. If a third party approaches or enters under the flight path, take appropriate safety measures such as giving appropriate advice to the pilot and aborting the flight.

Assistants will inform others about the flight of unmanned aircraft.

３－３　System for night flights

During night flights, the aircraft will not be flown out of sight, but will be equipped with lights that make the direction of the aircraft visible, and will be limited to flying within the range of easily recognizable lights of the aircraft.

Conduct the flight only under conditions where there are no third parties within a radius of the same distance as the flight altitude.

The pilot must have completed night flight training.

Ensure that the assistants are fully aware of the characteristics of the unmanned aircraft being flown.

Ensure sufficient lighting in the aircraft take-off and landing areas at night with car headlights and photographic lighting equipment.

３－４　System for conducting unseen flights

Prior to the flight, make sure that there are no third parties under the flight route, and fly out of sight under the guidance of assistants with binoculars or the like.

The pilot must be a person who has completed training in non-visual flight.

Ensure that the assistants are fully aware of the characteristics of the unmanned aircraft being flown.

３－５　System for transporting or dropping hazardous materials

Appropriately assign and fly assistants in accordance with 3-1.

When transporting hazardous materials, handle them safely in accordance with the relevant laws and regulations.

In the case of object drop, the pilot must be a person who has completed training for object drop.

３－６　Emergency Communication System

Check in advance the contact information of the police and fire departments with jurisdiction over the location of the flight.

(16) In the event of any of the situations listed in (16) above, immediately contact the police department, fire department, and other necessary agencies, etc., as well as the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), which has granted permission, etc., to the Flight Safety Division, Safety Department, Civil Aviation Bureau, Regional Civil Aviation Bureau, or the Airport Office, as described below. For reports made during off-duty hours, such as at night, call the nearest airport office that is in operation 24 hours a day.

国土交通省航空局安全部運航安全課　　03-5253-8111 (ext. 48687, 48688)

東京航空局保安部運用課　　03-6685-8005

大阪航空局保安部運用課　　06-6949-6609

最寄りの空港事務所　(After office hours corresponds to the prefecture in which the flight was performed, as shown in the following table.

(Contact the 24-hour airport office that will

官　station (esp. a police station)	Contact.	jurisdictional area	office hours	Out-of-office contact information (The nearest one operating 24 hours a day. (Airport Office)
New Chitose Airport Office (24 hours a day)	平　day of the week ☎: 0123-23-4195 weekends and holidays ☎: 0123-23-4102	Otaru City, Asahikawa City, Muroran City, Yubari City, Iwamizawa City, Rumoi City, Tomakomai City, Bibai City, Ashibetsu City, Akabira City, Shibetsu City, Nayoro City, Mikasa City, Chitose City, Takikawa City, Sunagawa City, Utashinai City, Fukagawa City, Furano City, Noboribetsu City, Eniwa City, Date City, under the jurisdiction of the Goshi General Promotion Bureau, under the jurisdiction of the Sorachi General Promotion Bureau, under the jurisdiction of the Kamikawa General Promotion Bureau, Rumoi In the jurisdiction of the Regional Development Bureau, in the jurisdiction of the Iburi General Development Bureau, and in the jurisdiction of the Hidaka Development Bureau	24 hours	
Wakkanai Airport Office	☎: 0162-27-2740	Within the jurisdiction of Wakkanai City and Soya Development Bureau in Hokkaido	8:30-18:30	New Chitose Airport Office

Hakodate Airport Office	☎: 0138-57-1738	Hakodate and Watarijima in Hokkaido Within the jurisdiction of the Shinko Bureau and Hiyama Shinko Bureau	7:30-20:30	New Chitose Airport Office
Kushiro Airport Office	☎: 0154-57-6284	In Hokkaido, in the cities of Kushiro, Obihiro, Kitami, Abashiri, Monbetsu, Nemuro, Okhotsk, Tokachi, Kushiro and Nemuro, and in the precincts of the Okhotsk Promotion Bureau.	8:00-21:00	New Chitose Airport Office
Sendai Airport Office (24 hours a day)	Telephone number: 022-383-1301	Iwate, Miyagi, Akita and Fukushima prefectures prefecture (of Japan)	24 hours	
Narita Airport Office (24 hours a day)	(Weekdays 9:00-12:00 13:00-17:00) ☎: 0476-32-1048 (Other than the above) ☎: 0476-32-6410	Chiba prefecture (Japan)	24 hours	

Tokyo Airport Office (24 hours a day)	[Weekdays 9:00 a.m. to 5:00 p.m.] ☎: 03-5757-3022 Nighttime/Holidays】* Only in case of an emergency ☎: 03-5756-1531	Sapporo City, Ebetsu City, Ishikari City, Ishikari City, and Ishikari Subprefecture in Hokkaido, Aomori Prefecture, Tochigi Prefecture, Gunma Prefecture, Saitama Prefecture, Tokyo Prefecture, Kanagawa Prefecture, Yamanashi Prefecture, Nagano Prefecture, Shizuoka Prefecture and Ishikari Subprefecture. Ibaraki prefecture (Kantou area)	24 hours	
Niigata Airport Office	☎: 025-273-5093	Yamagata and Niigata Prefectures	7:30-21:30	Sendai Airport Office
Chubu Airport Office (24 hours a day)	☎: 0569-38-2158	Gifu, Aichi and Mie prefectures	24 hours	
Osaka Airport Office (24 hours a day)	(Weekdays 9:00-12:00 13:00-17:00) ☎: 06-6843-1127 (Nights and holidays) ☎: 06-6843-1124	Shiga, Kyoto and Osaka prefectures (excluding areas under the jurisdiction of Yao Airport Office and Kansai Airport Office) (ku). Hyogo and Okayama Prefectures	24 hours	
Yao Airport Office	☎: 072-922-9021	Yao City, Tondabayashi City, Kawachinagano City, Matsubara City, Kashiwara City, Habikino City, Fujiiji City, Higashi Osaka City, Osaka Sayama City and Minami Kawachi County in Osaka Prefecture, and Nara Prefecture	8:00-19:30	Osaka Airport Office

Kansai Airport Office (24 hours a day)	(weekdays 9am-5pm) ☎: 072-455-1330 (Other than the above) 072-455-1334 072-455-1335	Toyama, Ishikawa, Fukui, Sakai, Kishiwada, Izumi-Otsu, Kaizuka, Izumisano, Izumi, Takaishi, Sennan, Hannan, Semboku, and Sennan counties in Osaka Prefecture. Tokushima and Kagawa prefectures. Prefecture, Kumamoto Prefecture	24 hours	
Hiroshima Airport Office	☎: 0848-86-86-8654	Hiroshima Prefecture	7:30-21:30	Fukuoka Airport Office
Matsuyama Airport Office	☎: 089-972-0393	Ehime Prefecture	7:00-22:00	Fukuoka Airport Office
Kochi Airport Office	☎: 088-863-2620	Kouchi (Kochi) prefecture	7:00-21:00	Fukuoka Airport Office
Fukuoka Airport Office (24 hours a day)	(weekdays 9:00-17:00) ☎: 092-629-4012 (Saturdays, Sundays, holidays, and New Year's holidays) ☎: 092-622-6529	Fukuoka Prefecture (excluding areas under the jurisdiction of the Kitakyushu Airport Office), Saga Prefecture, Nagasaki Prefecture, Tsushima City and Iki City Tsushima City and Iki City in Saga Prefecture and Nagasaki Prefecture	24 hours	

Kitakyushu Airport Office	☎: 093-473-1089	Shimonoseki City, Ube City, Nagato City, Miya City and Sanyo Onoda City in Yamaguchi Prefecture, and Kitakyushu City, Gyobashi City, Buzen City, Kyoto County and Tsukiage in Fukuoka Prefecture. county	24 hours	
Nagasaki Airport Office	☎: 0957-53-6901	Nagasaki Prefecture (under the jurisdiction of the Fukuoka Airport Office) (excluding areas that belong to the	7:00-22:00	Fukuoka Airport Office
Oita Airport Office	☎: 0978-67-3773	Oita prefecture	7:30-22:30	Fukuoka Airport Office
Miyazaki Airport Office	☎: 0985-51-2184	Miyazaki prefecture (Japan)	7:30-21:30	Kagoshima Airport Office
Kagoshima Airport Office (24 hours a day)	☎: 0995-58-4461	Kagoshima prefecture (Japan)	24 hours	
Naha Airport Office (24 hours a day)	(weekdays from 9am-5pm) ☎: 098-859-5132 (Other than the above) ☎: 098-857-1107	Okinawa Prefecture	24 hours	

(Form 1) Unmanned Aircraft Inspection and Maintenance Record

（点検機体名：　　(e.g. "I'll be back")

inspection date	inspector	Inspection details			Replacement parts, etc.
		Inspection items		Inspection Results	
		Aircraft in general	Equipment installation status (Screws, connectors, cables, etc.)		
		propeller	appearance		
			damage		
			distortion		
		frame	appearance		
			damage		
			distortion		
		communication system	of the fuselage and controls. Soundness of communication quality		
		propulsion system	Soundness of the motor or engine		
		power system	of the fuselage and control system Power Supply Integrity		
		automatic control system	Soundness of the flight control system		
		piloting device	appearance		
			Stick Health		
			Switch Health		
(Special note)					

(Form 2) Flight Records of Unmanned Aerial Vehicles

date	Name of the person to be flown.	Flight Summary	An unmanned aerial vehicle that was flown.	Takeoff location	take off time	Landing Location	land ing time	flig ht time	Total flight time	Matters affecting the safety of the flight